Distr.: General
16 June 1999

Original: English

THIRD UNITED NATIONS CONFERENCE ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE

Vienna
19-30 July 1999

Abstract of the national paper of Romania

1. The paper presents an overview of the main activities and developments in Romania in the field of space science, technology and its applications. The presentation is divided into the following sections: history, organizational matters and institutional framework, National Space Programme and regional and international cooperation.

I. History

2. The following developments testify to the fact that Romania is recognized as a country with an aerospace tradition and represents the basis for the space enterprise in the future:

(a) The existence of historical personalities such as Conrad Haas (constructor of multi-stage rockets with delta stabilizers, Sibiu, 1529), Aurel Vlaicu (the first Romanian aerospace engineer), Traian Vuia (designer and constructor of the first autonomous take-off aeroplane in 1906), Henri Coanda (designer and constructor of the first jet aeroplane in 1910), Hermann Oberth (designer of space rockets and "father of space navigation"), Elie Carafoli (important contributions in aerodynamics and space sciences, President of the International Astronautical Federation (IAF) in 1961-1962);

(b) The development of the aeronautical industry, which at present includes the manufacturing, based on original designs or under licence, of more than 20 types of transport aeroplanes, helicopters, passenger medium couriers and light aeroplanes;

(c) Romanian contributions to more than 30 scientific and technological space missions, including the mission of the first Romanian cosmonaut in 1981;

(d) Experience in the field of space applications: since 1997 the International Telecommunications Satellite Organization (INTELSAT) Cheia ground station with two 32-metre antennas is operational; applications of remote sensing imagery and Global Positioning System technology for use in the oil industry, agriculture, environment, cartography and land use;

(e) The large sector of commercial space applications, as space communications, applications of satellite remote sensing, geographic informational systems, positioning and navigation, and global information systems.

3. In order to reconsider the importance of space activities as necessary elements for the development of the Romanian community, the public authorities in cooperation with the private sector have created and supported this endeavour.

II. Organizational matters and institutional framework

4. The national coordinating body of the space activities is the Romanian Space Agency (ROSA), established in 1991 and reorganized by government decision in 1995 as an independent public institution under the auspices of the Ministry of Research and Technology (at present the National Agency for Science, Technology and Innovation).

5. The objectives of ROSA are to promote and coordinate space development and national efforts in the field and, as a government representative, to promote international cooperation. In particular, ROSA is authorized to establish research and development centres relating to specific objectives of the Romanian Space Programme.

6. One of the Agency's main responsibilities is to coordinate the activities of the national space research and development programme. In cooperation with the Scientific Council for Aeronautics and Space of the Government's Advisory Board for Research and Development, the public financing body, ROSA assigns the funding to the following areas: basic space science, space structures, technology, microgravity, communications, information, education, Earth observation and remote sensing applications, life sciences and medicine.

7. On behalf of the Government, ROSA is the national representative in the cooperative agreements with international organizations, such as European Space Agency (ESA) and Committee on Space Research (COSPAR), as well as bilateral governmental agreements. Together with the Ministry of Foreign Affairs, ROSA represents Romania in the sessions of the Committee on the Peaceful Uses of Outer Space and its subcommittees.

8. Romania is a party to all major international treaties concerning space activities.

III. National Space Programme

9. The National Space Programme encompasses the main space activities of the country. Research projects are included in the National Research and Development Programme Horizon 2000, which contains a separate section for space research and development. About 40 research and higher education institutions are affiliated to the ROSA network, developing specific project components of the national space plan.

10. The financing priorities are (a) medium-term projects and initial studies with effective spin-offs to the national economy, defined by ROSA together with users and those who benefit from the results; (b) basic and advanced space research in specific areas undertaken on an international cooperative basis or as lead agency in the research group in the particular field; and (c) space infrastructure objectives.

11. Successful launches of scientific experiments and devices designed by Romanian scientists have been carried out in the context of several international space missions: a number of scientific instruments and devices developed by Romanian scientists are at present in orbit. Meaningful scientific results have been obtained in astrophysics, Earth environment studies, microgravity research, fundamental space science, thermal elasticity and information processing. Those results have been presented at international congresses, including the COSPAR Scientific Assembly and the IAF Congress. A significant number of research reports have been published in international journals and a large number of projects have led to spin-

offs, especially in satellite communications, small aircraft onboard technology, thermography algorithms and information technology.

12. Since 1998, the National Space Programme has been redrafted in the following main areas: space strategy and infrastructure, space science, space applications, space technology and spin-offs. In order to develop space infrastructure and capacity-building, projects are oriented towards space science and its applications. Special emphasis has been placed on projects of national significance, including a small satellite for hazard monitoring and a public database of satellite imagery, which will become operational in the next few years.

13. One of the most significant objectives of the National Space Programme is the development, under the auspices of the United Nations, of a national centre for research and education in space science and technology.

14. As regards the role of private industry, important progress can be noted in the development of space communications, applications of satellite remote sensing, geographic information systems, positioning and navigation systems and devices, global information systems and telemedicine. Several companies in Romania are at present promoting applications in geology, meteorology, cartography, natural resources, navigation systems and satellite networking for information.

IV. Regional and international cooperation

15. Regional and international cooperation has always played an important role in the planning and implementation of space benefits for economic and social development, which is a prerequisite for the sustainable progress of mankind.

16. During the 1970s and 1980s, Romania was an active member of the programme of the Council on International Cooperation in the Study and Utilization of Outer Space (INTERCOSMOS). At the same time, Romania has been affiliated to several relevant international organizations, such as COSPAR, the International Telecommunications Satellite Organization and the International Mobile Satellite Organization, and consequently has developed joint activities. Romania is also a member of the International Council for Science and IAF and takes part in their major scientific activities.

17. Another aspect of the international cooperation of Romania has been its cooperation with ESA. Romania was one of the first Eastern European countries to conclude a cooperation agreement with ESA in the field of the peaceful use of outer space, signed in 1992 and ratified by the Romanian Parliament in July 1993. As part of that cooperation, research projects with other European countries (including training of Romanian scientists in ESA countries, access to European space information systems, technical support given by ESA for the development of indigenous space applications and workshops), as well as other relevant activities have been carried out.

18. Romania has participated effectively in the work of the Committee on the Peaceful Uses of Outer Space, acting as Vice-President from its establishment in 1959 to 1997. Romanian delegations are actively represented in the Committee and in its two subcommittees (Scientific and Technical, and Legal).

19. Together with Greece, Romania has introduced during the sessions of the Committee the concept of a network of space science and technology research and education institutions for central, eastern and south-eastern Europe. At present the representatives of Bulgaria, Greece, Poland, Romania, Slovakia and Turkey have agreed to establish the network, which will be organized under the coordination of the Office for Outer Space Affairs. In that context,

Romania has offered infrastructure facilities for the establishment of a regional centre for space science and technology, as an element of the network.

20. ROSA has established and promoted mutual relations with other space agencies and organizations, with major interest in both global and regional integration. Cooperation projects with the Italian Space Agency were included in the intergovernmental agreement between Romania and Italy. ROSA has also signed cooperation agreements with counterpart agencies from Bulgaria and Hungary. More than 120 cooperation agreements have been concluded between research and development entities from Romania and institutions from more than 40 countries. In preparation for the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), Romania organized, together with the Office for Outer Space Affairs, and hosted the Regional Preparatory Conference for Eastern Europe. The recommendations and proposals agreed upon at the Preparatory Conference constitute the regional input for consideration at UNISPACE III.